PHILADELPHIA MEDICAL TIMES.

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CLINICAL LECTURE.

ON THE REPAIR OF LACERATED PERINEUM.

BY WILLIAM GOODELL, M.D.,

Professor of Gynecology, in the University of Pennsylvania, etc.

Delivered at the Hospital of the University of Pennsylvania, February 24, 1888.

GENTLEMEN:—While our patient is being etherized, I will give you a short account of her case: This woman is married and has three children; she is about thirty years of age. She had difficulty with her first labor, about six years ago. It was a forceps delivery which tore the neck of the womb as well as the perineum; the laceration being complete and as I found upon examination, it extended for some distance above the sphincter ani. When she came to us a few days ago I found that she was about four months pregnant. This you see introduced a new complication into the case. The question comes up, whether it were better to operate now or to wait? Of course we must defer operation upon the womb until after the labor, but shall we also leave the lacerated perineum until that time? This is the way I argue the case: If I wait to operate until she has been delivered, I should further have to wait until the child is weaned. Therefore, it would be at least two years before I should again have a chance to operate upon the perineum. During all that time she would have no control over the lower bowel, she would constantly have to wear a napkin and the escape of wind and the contents of the lower bowel would be a source of constant mortification, and prevent her from going into the company of her friends. On the other hand an operation would relieve her of this annoyance at once, and would be without danger as regards the pregnancy. I have decided therefore to operate to-day.

In preparation for the operation, she was given a laxative yesterday morning and again last evening, and this morning the lower bowel was cleansed with a large injection of warm water. The perineum has been washed with carbolized water, and the skin has been shaved. The patient lying on her back, with her sacrum at the edge of the operating table, has her thighs and knees strongly flexed and securely held in position by the aid of Clover's apparatus, and the field of operation is before us.

You see these wrinkles in the skin at each side of the anus. They indicate that the sphincter ani has been torn through; they are never seen in front of the anus but at the sides and a little

posteriorly. Now then, in order to find the torn extremities of the sphincter muscle we must look for the depression or dimple in the skin on each side. Here they are easily seen. The end of the torn muscle is immediately beneath this spot. We also find that the tear has extended for at least one inch up into the rectum. She has, as you have heard, no control over the contents of the bowel whatever.

I will now proceed to denude the part commencing over the dimple on one side (the left), carrying my dissection of the skin with my scissors directly across the perineum until I reach the corresponding point on the right side, removing a strip a quarter of an inch in width. Now, I will take another denudation a little higher up; trying to keep it in one piece if I can. My reason for doing this is that when I cut off strips I know that the tissue is all removed, and that no part escapes denudation. We have, now, a raw surface extending directly across the perineum, beginning on each side with the termination of the torn ends of the sphincter.

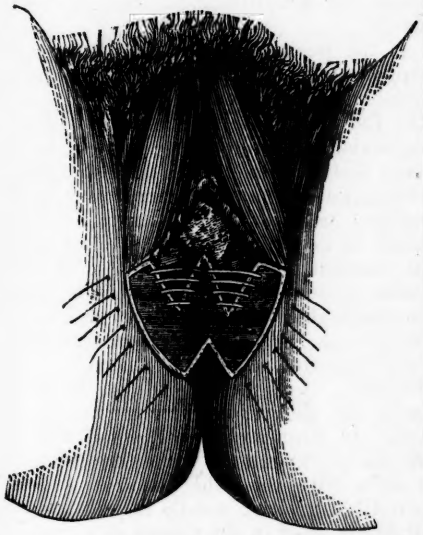
I am going to sew up the tear in the bowel at once before going any further. For the sutures, I prefer fine cat-gut soaked in oil of juniper, for the reason that it gradually dissolves in the wound and does not require to be removed by the surgeon as silk or wire would. In the present case, as I have not that kind of gut at hand, I shall try carbolized horse-hair with which to stitch together the torn edges of the bowel. Now, watch this next step carefully, because upon it depends the success of the operation.

I do not believe that there is any other method that will repair the bowel as well as this one, or that will restore full control over the evacuations. By other modes of operating you can get a very good perineum, but there is none other that will give full control over the bowel. In paring the edges of the wound, I am careful not to cut too much into the mucous membrane of the bowel, because it will contract its lumen. I have now put in four interrupted sutures; the first being at the upper part of the lesion and the other lower down, each of the latter being lower than that immediately preceding. You will see, presently, how I have reduced the extent of the wrinkling; I do not expect to efface it entirely, because it has been here too long for the skin to recover its natural appearance at once. These stitches, you notice, do not take up any skin at all, but merely approximate the torn edges of the bowel. Each one is drawn tight, tied, and the ends cut short. It does not matter if they do cut a little. The fifth or final stitch, I am now taking, does include the skin with the sphincter muscle at its extremity, on each side; this, however, I shall not tie for the present, but shall leave it until all of the others, for the repair of the laceration of the perineum, are in place. You observe that this final stitch, when tied, will approximate the skin and also the mucous membrane, as well as the sphincter muscle, and will thus restore the form of the anus.

Now for the next step, which is the repair of the perineum. The surface must be denuded all the way up the labia as far as the cicatricial tissue extends. But I save as much as possible of the mucous membrane of the vagina to make a back wall to the new perineum. While dissecting up this mucous flap, I keep my left forefinger in the rectum to make sure that I do not cut through into the bowel. The denuded area should be equal upon each side of the median line.

I show you here a perineum needle, which goes by my name. It is more

curved than the one in ordinary use. It is to be buried in the tissue all the way across the perineum. The point is introduced into the sound skin upon one side of the perineum, and pushed through until it appears at a corresponding point upon the opposite side; my finger in the rectum shows me that it has not penetrated the bowel, nor has it appeared in the vagina. The suture is now loosely fastened with a shot. For the perineum, I am using silver-wire sutures. I prefer the wire here to cat-gut or horse-hair, because I can leave the sutures in for a week or more, if necessary; they do not yield, nor do they excite irritation; when the parts are ready, they will easily come away. These stitches, commencing at the lowest part of the wound, are introduced successively at intervals of less than a half an inch, until the upper margin of the wound is reached.



Before drawing the ligatures and fastening them, I have the surface of the wound washed with several syringefuls of carbolized water, in order to cleanse and disinfect the parts, and remove blood-clots, etc. This is an important precaution in order to secure success in all these plastic operations. In vesico-vaginal fistula failure is often due to the fact that the raw surfaces are not brought completely into apposition with each other on account of intervening clots. (The method of introduction of the sutures is sh own in the cut.)

The shot is now pushed down on the lowest suture and clamped, and in this way the six wires are successively fastened. You will notice that the edges of the mucous flap are brought into contact with mucous membrane, and the skin with skin; all the stitches are outside in the perineum and none appear in the vagina. This avoids a cicatrix in the vagina, which might tear in her approaching confinement.

This makes the very best perineum I know of; there is no other operation which can at all compare with it in giving a perineum so firm and secure. If you will put your finger into the vagina you will not feel any stitches; all the sutures are outside of the vagina.

Now with regard to the after-treatment. We shall get her bowels to move on the day after to-morrow. She shall have then some compound licorice powder. I shall try to get along without opium. I make it a rule, as far as possible, in these operations to avoid opium, and I have found that patients get along very well without it. Then we will open the bowels again in forty-eight hours, preferably by the laxative; but if this is not sufficient, she shall have an enema of warm soap-suds. I prefer the medicine, because I am afraid to trust the patient or her attendant with the syringe; she might not be sufficiently careful.

I prefer drawing her water for the first forty-eight hours. In inserting the catheter the patient should be lying upon her back, with her knees elevated; the attempt to introduce the instrument should not be made without the aid of sight.

After the operation the patient's knees are kept tied together. I do not regard this as essential, but prefer to have it done. She might move in her sleep and disarrange the dressing. She shall be fed on food which contains as little milk as possible, because milk makes a great deal of fæcal matter and also constipates. After the first dose of compound licorice powder she shall have a teaspoonful every eight hours, if necessary, until the bowels are in rather a loose condition.

[NOTE.—The patient made a rapid and uninterrupted recovery. From the day of the operation she had control over the sphincter and the escape of flatus, to her great delight. On the eighth day she was again shown to the class. The parts had united by first intention, and the perineum and anus were completely restored. The wires were removed, and the patient, after staying a few days longer in the hospital to regain her strength, returned to her home in the country sound and well, with the exception of the lacerated cervix uteri, which will be the subject of operation at some future time.—REP.]

ORIGINAL COMMUNICATIONS.

THE USE OF ELECTRICITY IN THE DISEASES OF WOMEN (INCLUDING THE PRACTICE OF ELECTROLYSIS.)

BY G. BETTON MASSEY, M. D.,
Physician to the Nervous Department of Howard Hospital, and late Electro-therapeutist to the Infirmary for Nervous Diseases.

SECOND PAPER.

ACTION OF CONCENTRATED MILLIAMPERE CURRENTS ON ORGANIZED TISSUES.—Gynecological applications of electricity consist so largely in the continuous, concentrated action of one or the other pole of a current strong enough to produce more or less destruction of tissue, that the exact nature of this destructive process invites close attention. A careful, naked eye observation of the phenomena when a strong current is flowing is certainly both instructive and impressive, as well as decidedly conducive to the future welfare of the observer's patients. An experiment with fresh butcher's meat will give a very good illustration of the chemical part of these phenomena as they occur within the living body.

CHEMICAL EFFECTS AT EACH POLE.

Experiment 11.—Procure a half pound of beef muscle; insert into it two ordinary steel needles, one connected with the positive pole and the other with the negative pole of a good battery, and pass through the meat from 100 to 200 milliamperes for two minutes.

A sort of hissing or frying noise will be heard. This is seen to be caused by the rapid production and escape of small bubbles (of hydrogen gas) from the track of the negative needle. The positive needle will cause no appreciable production of gas, but will immediately be found to be so firmly fixed in the tissues as to be withdrawable with difficulty.

On cutting down alongside the negative needle it is found to be practically surrounded by a cavity containing liquids and bubbles of hydrogen gas; the muscular tissue has been destroyed wherever in contact with the needle, the edges of the cavity showing it softened, infiltrated, and of a darker color. The needle remains as bright as ever.

The positive needle, if left in place and cut down upon, shows itself greatly rusted and corroded, enclosed firmly in a grayish eschar, colored darker in places by the dissolved iron of the needle.

If the positive needle be of brass, copper, nickel or any of the other baser metals, it is corroded with equal rapidity, the tissues being stained by the particular metallic salts formed for some distance from the needle. On using a gold or platinum needle for the positive pole, on the contrary, it is found to be practically unattacked by the nascent oxygen and acids. The tissues about the needle show now the uncomplicated picture of a positive electrolysis, viz., the characteristic hardening and searing of an acid application. A slight cavity forms about the needle, though not so large as that about the negative needle, filled with bubbles of oxygen gas which has failed to unite with the gold, and the non-corrodible positive needle is therefore not firmly fixed in the tissues as would happen with a baser metal. It is evident therefore that *whenever the active pole of a strong concentrated current is positive it should consist of either gold or platinum*, as otherwise the electrode surface is destroyed and the tissues infiltrated with a foreign metallic oxide.

The negative needle remains clean whatever the metal of which it is composed, or the strength of the current.

Reverting again to the disintegrated cavities in the meat, produced by the

negative and positive poles of a strong current (the positive pole having been non-corrodible), we can easily prove that the froth at the negative is alkaline, and that at the positive acid, by placing a drop of litmus solution upon each and allowing the current to continue a few moments. The blue color of the solution is unchanged at the negative pole, but is quickly reddened at the positive. By changing the character of the pole back and forth while still *in situ*, several such changes of color can be produced. The peculiarities of the disintegrating action of each pole are clearly due to the nascent alkalies of one and the nascent acids of the other. At the negative pole we have the soft liquefaction and infiltrated edges of an alkaline caustic. At the positive pole the hardened, coagulated eschar of an acid caustic.

ELECTRO-CHEMICAL REASONS FOR USING THE NEGATIVE POLE.—It is evident from these appearances that whenever destruction of tissue is desired the negative pole and its soft liquefaction is indicated, and therapeutic experience seems to confirm the view that the secondary effect of destructive electrolysis—absorption—is more extensive after the negative application.

ELECTRO-CHEMICAL REASONS FOR USING THE POSITIVE POLE.—From similar considerations, the use of the concentrated positive pole with strong currents is almost entirely limited to two objects in gynecological work, namely: the control of intra-uterine hemorrhage, which it accomplishes by sealing up the bleeding orifices by its characteristic coagulation; and the production of a patulous canal, as for the relief of stenosis of the os or cervix.

EXTENT OF DESTRUCTION AT THE POLES.—As to the extent of the destruction produced by a current—a question of great interest in the electrolysis of tumors and other structures beyond the range of vision—I have made the rough estimate that 200 ma., concentrated at the half-inch exposed end of a negative needle, will destroy an area of this length and a quarter of an inch in diameter in the muscular tissue of the cadaver, if passed through for two minutes. It is more than probable that living muscle is acted upon to exactly the same extent, an equal destruction occurring in either case with the same number of milliamperes, duration and concentration of the application; although more force is required to get the same current through the drier, dead muscle. This difference of resistance does not need to be considered, of course, when a current controller is used, as it matters nothing what the cell power may be if the milliampere readings are made to correspond. The amount of destruction produced by the same number of milliamperes in different tissues varies though, and it may be said to depend largely on the aqueous contents of the tissue, for the cavities produced in the experiments on meat were caused to a large extent by the destruction of water. Less decomposition will be attained by the same current in a fibroma than in a striated muscle for this reason, and the disintegration depends more largely on the cauterizing effects of the liberated chemicals.

ELECTRO-PUNCTURE IN GYNECOLOGY.—The practical work of electrolysis in gynecology differs from the experiments just described, in that but one pole is permitted to be sufficiently concentrated to produce such results; the other pole, consisting of a large dispersing electrode, being placed, as properly advised by Engelmann, on the nearest convenient surface. This active pole, in the shape of a strong, spear-headed needle, has its conducting surface still further contracted by being insulated to within a half inch of the point, enabling the operator to confine the work strictly to the neoplasm itself. Full details and directions for the performance of electro-puncture within the pelvis will be given in a subsequent paper of this series, in discussing the treatment of fibroid tumors.

CAUTERIZATION.—If electrolytic destruction of tissue has been produced by an active pole merely placed in contact with a mucous surface, it is called by Apostoli a *cauterization*, and this designation will not readily confound it with the entirely different cauterization produced by the heat of a galvano-cautery knife, if the polar nature of the application is always stated as it should be—whether a positive or a negative cauterization. This electrolytic cau-

terization with a single pole does not differ in any respect from that of electro-puncture, being found only when a strong current is concentrated in its passage through a mucous membrane by the small area of the conducting surface of an electrode, or when a weaker current is unduly prolonged. It is illustrated by slightly varying the experiment given above. Instead of needles use two blunt metallic surfaces merely pressed into good contact with the meat. The same phenomena will be observed with similar current strengths as in the puncture experiments, with the sole difference that the energy of the disintegration of the surface will be lessened owing to greater electrode size, and consequently lessened concentration.

The need of a moist covering for the electrode, that is so important when we wish a current to penetrate through the skin, does not exist in a permucous application, for the mucous surface is always sufficiently moist to furnish a perfect conducting joint between the metallic surface and itself. Several recent writers have been led astray on this point, teaching that a cotton covered electrode favored easy transmission of current to deeper structures in permucous as well as in perçutaneous work, and that the bare metal alone was liable to produce cauterization of the mucous surface. In truth there is no difference between either the local or distant action of a covered and an uncovered negative electrode *when the current strength and the extreme area of the conducting surface of the electrodes* remain the same. The wrapping of a bare electrode of course increases its size, and hence lessens the concentration of a given number of milliamperes; but if the experiment be tried of passing the same number of milliamperes through a piece of meat in two different situations—once with bare poles and again with wire ends wrapped firmly with cotton until their total size is the same as the bare poles—it will be found that the electrolysis is exactly the same, except that the cotton about the positive pole will save the meat some staining if the pole is of baser metal. The electrolysis produced in either case is a mere matter of strength and concentration of current, and one can cauterize a surface just as effectively with a cotton-covered electrode as with a bare one of the same size. The only way to avoid local action when using a strong current is to disperse its force by increasing the surface of the active electrode, and in vaginal applications at any rate this is quite possible by the use of large oval or cylindrical conducting surfaces.

Polar and Interpolar Regions:—In performing experiments, and in all therapeutic punctures and cauterizations, it will be noticed that no visible change occurs in the meat or tissues except directly at each pole. This is because an electrolytic disintegration of animal tissue consists in a resolution of the organized compounds of which it is formed into their chemical constituents—acids and bases—the two classes of bodies being separated and conveyed to one or the other pole. The acids, oxygen, etc., appear at the positive pole, and the bases and hydrogen at the negative pole. An actual transfer of particles in both directions takes place through the whole distance of tissue between the poles* but the freed particles, singularly enough, appear only in the immediate neighborhood of the latter. These freed particles, being in the active condition known to chemists as *nascent*, immediately attack the tissues at the poles, and, if in overwhelming abundance, cause the peculiar destructive appearances described in the preceding paragraphs.

The passage of a current of appreciable milliampere strength through the body presents, therefore, three distinct regions for therapeutic possibilities (Fig. 5), two, restricted to the immediate vicinity of the electrodes, and called the "polar regions," and the third extending along the lines of least resistance between the first two and called the "interpolar region." Within the interpolar region the interstitial and cellular irritation incidental to the transmission of the current and of the particles that appear naked at the poles

*This may be experimentally proven by wetting the kathode with a solution of potassium iodide; after a varying period of application and strength of current, the free iodide will appear at the anode, having passed through the intervening part of the body.

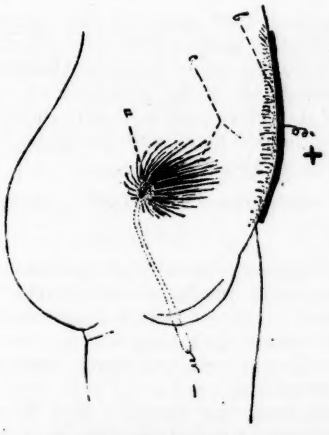


Fig. 5.—Diagram of the polar and interpolar regions of a current. A. Active polar region (negative in diagram.) B. Indifferent polar region (positive in diagram.) C. Interpolar region. The radiating curved lines in the interpolar region show the situations in this region where the current density is greatest; with the indifferent electrode on the back instead of the abdomen the denser area is more posterior.

(cataphoresis), is the chief basis for therapeutic results, while in the polar regions the chemical action of these particles, as described above, is supplemented by another set of phenomena due to the behavior of nerves when under the influence of concentrated current at either pole. It is in the immediate vicinity of the poles therefore that the most direct therapeutic results are obtained, and the readiness with which electrodes may be brought in contact with diseased conditions within the pelvis is a most promising fact for the electro-therapeutics of gynecology; although even in this class of diseases, the interpolar action of the current must frequently be depended upon.

It is hardly necessary to mention here that no attention is paid to the direction of the current, as such, by modern therapeutists, who look only to the polarity of the active electrode. The older terms "ascending" and "descending" were incorrect in view of the fact that a current spreads in all directions beneath each pole; and the reactions formerly attributed to one or the other direction are now known to be due to the polarity. Even within the interpolar region the direction of the current has no known significance at present.

ALTERATION OF NERVE IRRITABILITY WITHIN EACH POLAR REGION.

Exp. 12. Attach two medium-sized electrodes of the same dimensions to the binding posts, place them (well wetted) on the skin over each peroneal nerve just back of the head of the fibula and increase the current to 5 or 10 ma.

The burning pain under the negative electrodes is in distinct contrast to the numb sensation under the positive. While pain is produced near the positive pole also, if the current be greatly increased in volume, it has been demonstrated by careful experiments that a nerve lying within the negative polar region has its normal excitability increased, and one lying within the positive polar region has its normal excitability diminished. These physiological facts were very early applied to the treatment of neuralgic conditions and the rule laid down that the positive pole was the best adapted for the relief of pain. I, myself, believe that this rule has been too hastily adopted. The polar modifications of a nerve are beyond dispute, but it is more than questionable whether the production of either anelectrotonus (positive polarization) or katelectrotonus (negative polarization), within a nerve can exert any influence upon the pathological conditions giving rise to pain; at any rate my experience has been that the negative pole is even more effective for this purpose than the positive, or at any rate has been so satisfactory as to make it useless to resort to the positive pole with its necessarily incorrodible electrode. The efficiency of the negative pole in the relief of pain might be ascribed by some to the after effects of electrotonus, as ascertained by Waller and DeWatteville,* who showed that sedation followed the excitement of negative polarization after the discontinuance of the current, and vice versa with positive polarization; but, to my mind, the relief of pain is due rather to the influence of the current of either pole on the physical molecular conditions of the nerve trunk and on its circulation, as well as reflex impressions made on the center whence the pain so frequently emanates.

* Philosophical Transactions, 1882, p. 961.

A practical matter to be considered when using a current to impress the sensory nerves of the pelvis, is the wisdom of using as large a conducting surface for the vaginal electrode (when the application is vaginal) as convenient, in order that as much current—ten to thirty ma.—may be used as is possible, without unnecessary cauterization of the mucous membrane. It should also be understood that the region of nerve polarization about an active pole is somewhat larger than the region of chemical decomposition, and that we can readily include within it any nerve or nerves within, say three-quarters of an inch of the electrode, when using currents of 20 or 30 milliamperes.

CURRENT ACTION WITHIN THE INTERPOLAR REGION.

Since it follows from the facts touched upon in the foregoing paragraphs that the chemically destructive action of a continuous current is limited to the close neighborhood of the electrodes, and the direct nerve-modifying action is also limited to a somewhat larger region in the same situation, the natural question arises: What can be therapeutically accomplished when the seat of disease is necessarily situated beyond the direct reach of the electrode? An answer drawn from both neurological and gynecological experience is that much can be accomplished; and this is doubtless due, in the first place, to the influence upon nutrition of the chemical interchanges that occur throughout the circuit, in the onward progress of the particles that appear free finally at the poles (catalysis and cataphoresis), and partly to the influence upon nutrition of the circulatory changes that result from vasomotor stimulation. These results of quiet current transmission are governed in magnitude at a given spot by the *density* of the current at that situation and by the *duration* of the application. The difficulty of carrying an effective density to a tumor, extravasation, or other morbid spot, situated at some distance from the active electrode, is indicated by a glance at Fig. 5, in which the spread of current is well represented by the direction and shading of the lines shown in the interpolar region. To accomplish much in the more distant parts of this region considerable milliampere strength must be employed, hence a delicate judgment is demanded in the selection of the size of the active pole to avoid cauterization on the one hand and too great a diffusion on the other.

INTERRUPTED GALVANIC CURRENTS IN GYNECOLOGY.

Galvanic interruptions, either rapidly or slowly produced, are rarely if ever used in direct pelvic applications, for the reason that they are far more productive of pain and shock than faradic currents and are in no wise more effective than the latter.[1] The avoidance of current variation, indeed, is a most important detail in the majority of applications of this sort, and it is for this reason that the author has insisted on the gradually increasing and decreasing method in these papers.

A sudden current variation either accidentally or intentionally produced in a galvanic current (or as naturally occurs at the beginning of each induction in the series of currents constituting the faradic current) should be understood as productive of effects that are essentially different from those of the continuous current. So far as we know at present the perturbation produced by it is limited entirely to an artificial stimulation of the functions of a nerve or muscle. No chemical changes whatever result from the variation as such, but merely the local stimulation, together with the centripetal and possible reflex effects of the sensory stimulus. The differing effects produced by a continuous current and by a current variation on a nerve may be studied by a slight addition to the details of experiment.

Exp. 13. *The effect on nerves of a slowly varied or continuous current compared with that of a sudden current variation.*—Proceed as in Exp. 12, noting that no pain or motion is produced in the distant parts of the nerve if the five or ten ma. have been attained by a *gradual* increase from zero. With the current at this height remove now one of the electrodes and re-apply

[1] This statement by no means applies to the neurological applications of electric currents.

it (or break and make the circuit by an interrupter), a contraction will be produced in the muscles supplied by the motor fibres, and a sudden sensation in the areas supplied by the sensory fibres of the nerve.[1]

Although exceedingly important in neurological work, such stimulations are generally to be avoided in gynecological applications, in which, if the current in use be heavy, they may be accompanied by exceedingly unpleasant shock, or even syncope.

ERYTHEMA NODOSUM.[2]

By O. M. ALLABEN, M.D.,
Of Margaretville, N. Y.

ERYTHEMA NODOSUM is a disease not often met with; but every physician having much practice will occasionally encounter, and can scarcely fail to diagnosticate it correctly from its description in the books. The fact of its infrequence has given it less prominence than it deserves; for, although not considered a fatal malady, it is often sufficiently severe to confine the patient to his bed or house for several weeks, or even months. That it is a strictly inflammatory affection has been conceded by nearly all authors who have written upon the subject. The recent System of Medicine of Dr. Pepper defines it as "an acute inflammatory affection characterized by the formation of variously-sized roundish or ovalish more or less elevated erythematous nodes;" and the late Dr. Geo. B. Wood in both theory and treatment favored the same view.

Its nosological status has always been found with the erythemata, but to my comprehension it bears upon its face quite as strongly the mark of a phlegmon.

Climate and local topography are leading factors in giving character to inflammatory action; and it may be that the pure mountain air of the Catskills and its excellent water, give a vigor and tonicity to the system which should be taken into account while studying the pathology of diseases in this region. Heat, pain, redness and swelling—the leading characteristics of phlegmonous inflammation—are found with equal certainty in every well-marked case of erythematous inflammation; the distinguishing feature being a disposition of the one to end in the suppurative process, while the other invariably terminates in resolution, through the agency of effused lymph, usually a little bloody, which is thrown out into the substance of the node; and its removal by the process of absorption. This accounts for the swelling in the first place, and the discolorations afterwards. The blood-vessels of the diseased part become engorged and the circulation obstructed. The vascular tension is relieved by the effusion of serum or lymph, which is finally removed by absorption, the thinner parts first and the blood corpuscles afterwards, completing the cure. This is nature's method of treatment, and would obviate the necessity for any artificial treatment could the patient afford to wait and suffer the pains, inconveniences, anxiety and loss, to which the natural process subjects him. The same might be said of any other self-limited disease; but the office of the physician is to assist nature in her efforts for good—to relieve the pain, remove the inconveniences, soothe the anxiety, and shorten the limits of the malady, by every rational means at his command.

"The causes of the disease are unknown," say our authorities; but the severe gastric disturbance and decided febrile indications which frequently attend the onset of the disease have led many to the conclusion that the causes are usually to be found in a disordered state of the system, and especially of the digestive organs.

It is regarded as a dermatitis involving the subcutaneous tissues, especially the lymphatic system of vessels.

Adopting the theory that the inflammatory process in this disease is acute

[1] If the nerves subjected to this experiment are not too deeply embedded in muscular or adipose tissue they exhibit very readily the normal polar reactions of motor nerves so important in connection with the electro-diagnosis of paralytic conditions. It is readily seen that greatest action is produced at the kathode at the closure of the circuit and at the anode at its opening—hence the formulæ, K. Cl. C''''., A. O. C'''., A. Cl. C''., K. O. C'.

[2] Read before the Third District Branch of the New York State Medical Association.

and nearly allied to phlogosis, I have in my practice usually followed the antiphlogistic method of treatment, and with the most satisfactory results. In illustration of the comparative value of the active and passive mode of treatment, I will offer, somewhat in detail, two or three cases which have occurred in this neighborhood under my observation, one of which was treated by myself, and the other by a neighboring physician of good standing, upon conservative or expectant principles.

Case I.—I. T., a middle aged, hard-working, well-to-do farmer, with regular habits, was seized several years since in early June with chills, followed by pains in his limbs, an excited pulse and a febrile condition of the system generally. Suddenly there appeared upon the tibial surface of one of his legs several hard, painful, throbbing, tender and red patches, about the size of a dollar. They were slightly elevated above the surrounding parts; and entirely incapacitated the patient from taking any exercise, as any attempt to do so, or even to stand upon his feet, so greatly aggravated all the symptoms, especially the pain and throbbing, that he could scarcely endure it. Blood-letting was immediately resorted to, which relieved the pain at once, reduced the redness and tension, and materially improved all the other symptoms. A saline cathartic was then ordered, the diseased limb placed in a horizontal position, and an antimonial diaphoretic directed to be given. After an interval of about forty-eight hours the patient was again visited, when all the above symptoms were found to be somewhat aggravated. The patient was again bled, and a slippery-elm poultice substituted for the saturnine lotion which had been previously used as a local application. At a subsequent visit the node was scarified with the lancet, no leeches being at hand, as the local applications had proved of little use in the treatment. This ended the active treatment and virtually completed the cure.

This case was one of the most severe at its commencement that ever came under my observation, and occupied just one week in running its course; the treatment having been commenced on the 7th of the month, and the patient discharged on the 14th, as he no longer needed the services of a physician.

Cases II and III.—The other two cases both occurred in the same family, and at about the same time. They were sisters, young ladies just ripening into womanhood, and were the daughters of a wealthy farmer, who relates the cases substantially as follows: They were both attacked in the month of March last, by the appearance of several hard, red, roundish patches, covering spots upon their shoulders, arms and legs. The nodes were not elevated much above the surrounding skin, but were somewhat painful and tender. The father does not know what remedies the doctor used; but the girls were neither bled nor leeched, and but little attention was paid to the nodes themselves. The remedies seemed to have but little effect, as the girls remained sick for a long time, and one of them had not yet fully recovered on the first of June.

The lessons which the above recital seems to teach, and the points in the above paper to which the attention of the profession is invited for consideration are:

1st. That erythema nodosum as it occurs in this region, is an acute inflammation of the skin and subcutaneous tissues, and more nearly allied to phlegmon than to any other erythema.

2d. That it has not received from physicians and authors the consideration which its importance requires.

3d. That its natural cure is effected through the instrumentality of effusion and absorption, which is a process of depletion.

4th. That its course can be limited and its symptoms relieved by the same treatment as other acute inflammatory diseases.

5th. That to imitate nature, and effect a cure by depletion, is analogically, physiologically and pathologically correct.

The *Electrical Review* comes out with a new and handsome cover, with several new departments, and, in fact, covered and filled with evidences of well deserved prosperity.

GUN-SHOT WOUND OF THE LIVER COMPLICATED WITH COMPOUND COMMINUTED FRACTURES OF THE SEVENTH, EIGHTH AND NINTH RIBS ON THE RIGHT SIDE; OPERATION; RECOVERY.

BY A. P. FRICK, A.A., SURG. U. S. A.

MR. F. S., a stock-raiser residing near Fort Thomas, A. T., aged 57 years, was admitted into the Camp Hospital on March 15, 1887.

On March 12, he had been on his range, alone, looking after some cattle. When at lunch, about 2 o'clock, P.M., he tried to drink from a brook without using a cup, and while stooping for this purpose, his revolver (a Colt's, caliber 44), fell from his pocket, the hammer striking a rock, and discharging a load into the right side of his body.

The wound is accurately described as follows, viz.: Wound of entrance 5½ inches outwardly from the anterior median line of the body, and about midway between the axilla and the anterior superior spinous process of the right ilium.

The exact measurements (the patient lying flat on his back) are as follows, viz.: Right axilla to wound of entrance 9 inches; anterior superior spinous process of right ilium to wound of entrance 8½ inches. Right axilla to wound of exit 10 inches; anterior superior spinous process of right ilium to wound of exit 8 inches; the wound of exit being about one inch lower than the wound of entrance, and the length of the track of the ball six inches antero-posteriorly. Distance from wound of exit to posterior median line of the body 5½ inches.

The measurement around the body at the seat of injury was 34 inches.

Those portions of the seventh, eighth and ninth ribs lying in the track of the ball were all comminuted.

Immediately following the reception of the injury there was profuse hemorrhage, which did not entirely cease until more than twelve hours afterwards. He was unable to mount his horse, or walk, and his friends did not find him until twenty-five hours after the accident.

Believing that the wound would necessarily prove fatal in a short time, his friends cared for him near the place where the accident occurred; but on March 14, twenty-four hours after finding the wounded man, it was decided to seek professional aid, and the patient was on that day brought in a wagon as far as old Camp Goodwin, seven miles from Fort Thomas, where I was then stationed, and placed in my care on the following day, March 15.

His temperature, on admission, was 99⅘°. Rest, quinine in tonic doses, and extra diet were prescribed.

On the 16, the temperature rose to 101⅘°, and to 102⅘° on the 17. I now recommended a surgical operation, and on March 18, after consultation, and with the efficient assistance of Drs. E. R. Morris and T. B. Davis, U. S. A., excised parts of the fractured ribs.

At 2 o'clock, P.M., the patient was brought to the operating room, and in fifteen minutes came fully under the influence of the ether which was administered. With the usual antiseptic precautions the parts lying between the wounds of entrance and of exit were divided on a grooved director, from the track of the ball outwards. Upper and lower flaps were dissected back far enough to reach sound portions of the injured ribs. After removing the loose fragments of bone, the shattered ends of the seventh, eighth and ninth ribs were cautiously cut and rounded with bone-nippers, guided on the inner side of the ribs by the index finger of my left hand.

Only one vessel, the eighth intercostal artery, required a ligature.

The lengths of the excised portions of ribs were about two and one-half inches, thus bringing into view the right lobe of the liver over a space of two and one-half by six inches, and showing a long lacerated wound of that organ, with an abscess one and one-half inches in depth situated about the middle of the exposed portion. The abscess discharged pus mingled with bile.

After removing all lacerated parts that must necessarily slough, the entire wound and the cavity of the abscess were thoroughly syringed and cleansed with

a solution of bichloride of mercury (1 part to 1000). A drainage-tube was now inserted into the cavity in the liver, another laid across the wound from the point of entrance to that of exit of the bullet, and the parts brought together by means of the interrupted suture.

The duration of the operation was thirty-five minutes.

The patient was then returned to his bed, a draw-sheet placed under him, the surface sponged frequently with the bichloride solution, and lint wet with lead and opium lotion kept constantly applied. The lotion was kept as cool as possible without having ice, and the cloths changed every few minutes for the first two or three days.

Magendie's solution of morphine (ten minims) was administered hypodermically, as soon as the effects of the ether had passed away, and afterwards quinine five grains, with one grain of opium, were given three times daily. In addition to this about six ounces of brandy in the form of egg-nog were given every twenty-four hours.

Twice each day the drainage-tubes were cleansed, and the parts thoroughly syringed through them with bichloride solution.

Mild, cooling laxatives and rectal injections were given as needed. Later on, ammonii carbonas was added to the stimulants. Milk, beef-essence, etc., were liberally given, and the same general treatment as above noted was pursued until all danger from peritonitis and septicæmia had passed.

The temperature in this case the day *before* the operation was $102\frac{3}{5}°$, which (with the exception of the tenth day *after* operation, when a temperature of $103\frac{2}{5}°$ was noted) was the highest reached throughout the case.

Through the central drainage-tube there was a free discharge of bile during the first ten days.

Troublesome bed-sores and slight necrosis of the proximal end of the ninth rib, requiring operation, were the only complications of any note that were encountered.

On June 1, 1887, the patient was discharged, cure complete, and in every way satisfactory.

Fort Selden, New Mexico.

THE STANDARDIZATION OF FLUID EXTRACTS.*

BY JACOB P. RUSSELL.

SINCE the introduction of fluid extracts, some twenty-five years ago, numerous studies have been made concerning them; and the results obtained, in relation to their menstrua, preparation, etc., have been most commendable.

But there are questions of another sort which remain to be answered; such as the proper mode of standardization, based upon their strength of active constituents, especially of the alkaloids.

No one who has examined this subject can have failed to note the wide degree of difference which exists between the various specimens of a fluid extract; no matter how closely the pharmacopœial instructions may have been obeyed. This is due to the variable amount of the active constituents in the drug.

With the view of obtaining more accurate knowledge of these preparations, the writer has examined four of the more important numbers of the alkaloidal fluid extracts.

The results obtained are herewith presented, in the hope that they may serve as a basis for more extended investigations.

By the variability of crude drugs, physicians are compelled to resort to the alkaloids, instead of galenical preparations. The effects are, however, not strictly equivalent; and in many instances the galenical preparations would be preferred by the physician, could he prescribe them with any reasonable degree of accuracy.

The fluid extracts selected for examination were those of cinchona, aconite, nux vomica and belladonna.

Samples of each were obtained from six prominent manufacturers, and from a selected sample of each drug I, myself, prepared a fluid extract for comparison.

I have no desire to criticise the products of these manufacturers, but wish to show the need for the adoption of a uniform standard, by the wide variation in the strength of these fluid ex-

* Abstract of Graduation Thesis presented at the Medico-Chirurgical College, for the degree of Doctor of Medicine, April, 1888.

tracts. This variation depends upon the difference in the quality of the drug used, and upon the method employed in making the extract.

Cinchona Fluid Extracts.—I assayed a sample of cinchona bark by the process of the B. Ph., which showed 2.55 per cent. of quinine. From this I made my fluid extract; which, assayed by the process of the U. S. P., 1880, gave 3.95 per cent. total alkaloids. The results are given below:

No.	Amount used.	Total alkaloids per mg.	Total alkaloids per cent.	Quinine.
1	20 c. c.	790	3.95	2.55
2	"	260	1.30	.....
3	"	290	1.45	.....
4	"	370	1.85	0.72
5	"	315	1.575	.....
6	"	450	2.25	.....
7	"	500	2.50	.....

Numbers one and four were the only samples assayed for quinine.

Assay of Belladonna.—The method employed was that of Dunstan and Ransom:

No.	Amount.	Total alkaloids in mg.	Per cent.
1	25 c. c.	140	0.56
2	"	45	0.18
3	"	145	0.58
4	"	100	0.40
5	"	98	0.398
6	"	100	0.40
7	"	120	0.48

Assay of Aconite Root.—The process was that of Duquesnel, except that I used sodic hydrate in place of potassic:

No.	Amount.	Alkaloid in mg.	Per cent.
1	50 c. c.	240	0.48
2	"	300	0.60
3	"	200	0.40
4	"	320	0.64
5	"	150	0.30
6	"	180	0.36
7	"	180	0.36

Assay of Nux Vomica.—In this the process used was that of Dunstan and Short:

No.	Amount.	Total alkaloids in mg.	Per cent.
1	25 c. c.	530	2.12
2	"	440	1.76
3	"	650	2.60
4	"	450	1.80
5	"	250	1.00
6	"	350	1.40
7	"	360	1.44

The proper remedy for this state of affairs is the adoption of a fixed standard of alkaloidal strength for all galenical preparations which can be so standardized; and of such tests for their examination as any physician or pharmacist can apply.

To the busy practitioner this may seem an undertaking of such magnitude as to forbid even its consideration, but this is not so.

With a given sample of an alkaloidal fluid extract, anyone with a mind disposed to research and analysis may in the spare moments of *one day* arrive at results so nearly correct as to be entirely satisfactory.

The appliances necessary are, first, a clear head, next, a good balance, a set of accurate metric weights, a 5, 25 and 50cc. graduated pipette, a few beaker glasses, a 20cc. tared glass capsule, a 200cc. porcelain evaporating dish, a set of test tubes from 3 to 8 in., a 50cc. cone-shaped graduated measure, a wide mouth bottle holding 200cc., a few sheets of white filtering paper, and we are prepared to make an accurate analysis of any of the more potent alkaloidal fluid extracts of the U. S. P.

As an example we will take fluid extract of belladonna. First find the specific gravity. This gives us a fairly good idea of the menstrum used. Now take 25cc. of the fluid extract, add to it a few drops of diluted H_2SO_4, to this add 25cc. of chloroform, and agitate with two successive 25cc. of distilled water; remove the chloroform with pipette. Mix the aqueous liquids and again agitate with 20cc. of chloroform to remove any adherent coloring matter. Allow it to rest for one hour, then remove the chloroform with pipette.

Now make the aqueous alkaloidal liquid slightly alkaline with ammonium hydrate, added *drop by drop*, testing carefully with acid litmus paper, so as

not to get it too alkaline. Agitate this with three successive 25cc. of chloroform, allowing each to separate from the watery solution before attempting to remove it.

Mix the chloroform solutions, and evaporate spontaneously in tared capsule, dry carefully, and weigh as total alkaloids. This multiplied by four gives us the per centum of alkaloids.

This process, while apparently tedious, is in reality easily and quickly accomplished, and when the details are carefully attended to, absolutely accurate results can be obtained.

For cinchona fluid extract, the process of U. S. P., 1880, for total alkaloids, give good results and is easily worked.

For nux vomica the writer would recommend the process of Messrs. Dunstan and Short.[1]

For aconite root the process of Duquesnel[2] gives the best results.

In my assays I have used various published formulæ, also modifications of my own; but the above give the best results, and are worked with ease.

In conclusion the writer would urge upon the pharmacists, manufacturing pharmacists especially, to take the initiative in this work, and establish definite standards in alkaloidal strength in fluid extracts, empirical though they may be, until our recognized authority, the U. S. P., in the next revision, sees fit to fall in with scientific advancement and adopts a general system of standardization for all galenical preparations.

[It is not intended by this article to advocate the superiority of any manufacturer's goods. Doubtless equally good results can be secured by the use of any one of the above list. But if one desires to prescribe with any pretention to accuracy, he must know the real strength of the preparation he is employing. If he desires to give a maximum dose of fluid extract of belladonna, and has been in the habit of using No. 2 with an alkaloidal strength of 0.18, the consequence would be disastrous were the pharmacist to fill the prescription with No. 3, whose alkaloidal strength is 0.58 per cent. Until the remedy suggested in this paper is adopted, physicians must continue to specify the brand they desire to employ, or to send their prescriptions to special pharmacists with whose preparation they are familiar.—EDS. P. M. T.]

[1] *American Journal Pharmacy*, 1884, p. 199.
[2] U. S. D., 1885, p. 123.

HOSPITAL NOTES.

HEMI-CHOREA COMING ON AFTER PARTURITION.—A very interesting case was presented at Osler's clinic at the Orthopædic Hospital, on last Wednesday. Mrs. X., the mother of three children, had an attack of inflammatory rheumatism, four months after the birth of her last child. From this she recovered, but four months afterward chorea appeared, commencing in the right thumb and the twitching extended up the entire arm, and subsequently appeared in the right leg, in which the motion was more marked than in the upper extremity. The choreic movements were confined to the right side. When she applied to the dispensary the above condition was noted; examination of the heart revealed a systolic basic murmur. No valvular-lesion was detected. The movements were much worse in damp or stormy weather, so that at times she was not able to walk across her room. She was treated by Fowler's solution, five drops three times daily, and increased until doses of ten or twelve drops were taken, or half a drachm daily. An interesting point in the case consisted in the fact that the patient had never had chorea in childhood, and none of her family had been similarly affected.

EPILEPSY FOLLOWING CHOREA. — A young woman, fifteen years of age, first appeared at the Orthopædic Hospital five years ago, suffering with an attack of chorea. She was treated by Fowler's solution, increased to ten drops three times daily. Recently symptoms of epilepsy came on and she has had three attacks within the last two weeks. She is now taking fifteen grains of potassium bromide thrice daily. The occurrence of epilepsy after chorea is rare enough to make the case noteworthy,

and Osler pointed out that some choreic movements were still present in the arm. Her general nutrition was good.

BRAIN TUMOR CURED BY POTASSIUM IODIDE.—Osler presented a man, forty-two years of age, who eighteen months ago had well-marked symptoms of cerebral tumor; persistent and severe headache, and well-marked double optic neuritis. Iodide of potassium was given in increasing doses until fifty grains were given three times daily. No other treatment was given. He steadily improved until now he seems in good health; the optic disks are slightly gray and the outline obscured, and there are still some evidences of old retinal hemorrhages.

IT may not be generally known among physicians that the bromide of lithium is almost a specific for muscular rheumatism.—*Bartholow.*

SOCIETY NOTES.

At the Philadelphia County Medical Society, Dr. Keen described a case in which Goodell had performed oöphorectomy in 1876. Temporary improvement followed, but the pain and other symptoms returned in 1887, Keen then performed hysterectomy, effecting a cure which is thought to be radical. The interesting point in this case consists in the development of myomata in the uterine tissues after removal of both ovaries.

Goodell stated that at the time of his operation there was a myoma as large as an infant's head; which nine months afterwards had shrunk to the size of a horse-chestnut. He expressed himself as skeptical as to the permanency of the cure.

Dr. John B. Roberts, in the County Medical Society, spoke of the loofah, or towel-gourd, as a useful substitute for the nail brush in scrubbing the skin previous to an aseptic operation.

They are cheap, can be carried easily in the satchel, and thrown away after having been once used.

Dr. J. William White exhibited the urinary organs of a man, on whom he was about to operate for vesical calculus when a sudden diarrhœa carried the man off.

The kidneys showed pyonephrosis, but little of the cortical substance remaining.

Dr. Joseph Price read a report of three cases of operation for strangulated hernia; all successful. He noted especially the rapidity with which the dark color of the intestine disappeared when the strangulation was relieved.

At the Neurological Society, Drs. Mills and Cahill described six cases of epidemic cerebro-spinal meningitis which were observed during the past winter in this city. Three cases recovered.

With reference to treatment, bromide of potassium, in half-drachm doses, failed to relieve the headache or produce sleep in the severe cases (the same result followed chloral). Nothing definite can be said as to the effect of quinine. Sodium salicylate and oil of gaultheria gave relief to the neuritic pains in the legs, but produced no appreciable benefit to the head and neck. Opium and morphia did positive good in every case, but after the more acute symptoms had passed the good effect seemed to be lost. In the two cases where iodide of potassium and the bichloride of mercury were used by Dr. Cahill, the effect was surprising to patient and physician alike. The improvement was too rapid to be the result of the alterative properties of the drugs, but more like the action of specific remedies.

At the Obstetric Society, Dr. Drysdale reported a case of multilocular papillomatous tumor of the broad ligament, producing obstruction of the bowels. An operation was performed, but the patient died of uræmia; one kidney being found subsequently to be converted into a cyst, and the other also diseased.

Dr. Price called attention to the depression of temperature occurring during the administration of ether. Dr. Drysdale considers this due to uræmia and not to the ether.

Dr. Hamill called attention to the fact that placental apoplexy is not of rare occurrence.

He also detailed a case in which a husband commenced to have morning sickness two weeks after his wife's last menstruation previous to parturition.

[It would be interesting to know if the husband were a drinking man.—ED.]

TRANSLATIONS.

CUNDURANGO IN CARCINOMA OF THE STOMACH.—Prof. Aser, of the Vienna Polyclinic, renews the discussion regarding the value of cundurango in the treatment of carcinoma of the stomach, in an article in the *Klinische Rundschau* for April. Cundurango was first prominently brought to notice as a therapeutic agent by Friedreich in 1874. He published a case of undoubted tumor of the stomach which was cured by the use of this drug. It, however, fell into disrepute, and little more was heard from it, except adversely, until 1887, when Reiss revived the subject by publishing his success in the treatment of one hundred and ninety-six cases, eighty of which were treated with cundurango; fifty-three died—66 per cent. Average length of treatment, 39.3 days. Of those dismissed, twenty-seven cases, 33.7 per cent., were under treatment 54.8 days. Twenty-four were recorded as improved and three cases as cured. Out of the one hundred and sixteen that were not treated with cundurango, one hundred and seven died—92.2 per cent.—in an average of twenty-two days from the time of admission. Nine cases were dismissed; five improved, and four in the same condition as when admitted. Since the publication of Reiss's statistics, Aser has given the decoction in doses of from six to eight teaspoonfuls daily, as advocated by Reiss. A large number of cases thus treated in the Polyclinic had shown no benefit therefrom. Of nine cases handled in the Rothschild hospitals, six were dismissed improved, and three died. In his private practice, however, Aser was more successful, and obtained results in two cases which served to give him more faith in the efficacy of the drug, and this is so plain that we quote it.

Herr M. S., aged 50; except for a chronic catarrhal affection of the stomach covering a period of time from 186› to 1870, had been healthy up to November, 1886, when he was taken very ill and consulted a homœopath, and remained under his treatment until January, 1887, when he came to Prof. Aser, who diagnosed a tumor in the pyloric region. He immediately put him on two teaspoonfuls cundurango decoction daily. The tumor continued to increase in size while the body weight decreased. The patient also showed marked cachexia.

Up to the 21st of April the patient had lost twelve pounds, and the tumor, now the size of a walnut, was painful on pressure. Aser considered the diagnosis of carcinoma ventriculi as certain, and so stated to the family. In June the patient went into the country, and continued to take from six to eight teaspoonfuls of the drug daily. His weight remained about the same until October, when it began to increase. When Aser saw him again in November, he was very much surprised at the change. He was still thin, but had lost the cachectic appearance, and all trace of resistance in the pyloric region had disappeared. The treatment was now discontinued. The patient continued to improve, appetite good, was able to resume his occupation, and ascribed his cure to cundurango. which he said had given him back his lost health. S.

ANTHRAROBIN, A NEW THERAPEUTIC AGENT IN THE TREATMENT OF PSORIASIS, HERPES TONSURANS, ECZEMA MARGINATUM, PITYRIASIS VERSICOLOR, ETC.—It is claimed by Dr. Gustav Behrend, docent in Berlin, who has experimented considerably with this new preparation, that it does not produce any inflammation of the skin, and can therefore be used on the face and head, also on the genitalia. One of the serious objections that have been urged against chrysarobin has been its irritating action, which is so well known that it is seldom used in the face or on the head. Dr. P. Guttman, in discussing the comparative merits of the two agents before the Berlin Medical Society, said that he had used anthrarobin in the treatment of six cases of psoriasis with beneficial effect. The agent cured the disease, but worked slower than chrysarobin, even when used in a much stronger concentration. In order to show the comparative merits of the two drugs, he

presented a patient that had psoriasis over the entire body, and who had been treated differently on each extremity. The right arm had been rubbed daily with a five per cent. chrysarobin salve, while a twenty per cent. salve of anthrarobin had been applied to the left arm for a similar length of time, and a twenty per cent. alcoholic solution of anthrarobin had been used on the left leg once daily. The right arm, which had been treated with chrysarobin, was entirely healed, while the left arm, treated with anthrarobin, would require several more days treatment; also, the left leg, upon which the alcoholic solution had been used. Dr. G. went on to say that he considered the remedy an addition to our pharmacopœia, and that it had some excellent features over chrysarobin. He had used it in five other cases in comparison with ichthyol and white precipitate, in the face and on the head, and had produced neither a dermatitis or conjunctivitis. It had the failing of dyeing the hair red, which, however, compared with the danger of a conjunctivitis when chrysarobin was used, was not to be taken into consideration. Several points were brought out in the discussion regarding the cause of irritation in chrysarobin. Dr. Behrend said that he had often noticed that when chrysarobin was used in solution it was more irritating than when used as a salve; also that we must avoid the use of alkalies when using chrysarobin. He had in many cases found that as soon as the patient used soap an acute dermatitis was set up with intense itching, so that many times sleep was impossible. This was allayed by the use of a weak acid, but the therapeutic effect of the chrysarobin was weakened thereby. The presence of the alkali rendered the more rapid oxidation of the chrysarobin possible. The same was true of anthrarobin, and its efficacy could be increased by first smearing the body with soap, which he often did.

Dr. Behrend describes anthrarobin as a yellowish-white powder, somewhat coarsely granular, which gives a characteristic irritation to the mucous membrane of the nose. It mixes easily with lard, oil and lanolin. It is thoroughly soluble in alcohol and water. It is miscible, in the strength of ten to one hundred, in glycerine.

Dr. Behrend suggests the following formulæ:

℞ Anthrarobini ....grms 10—ʒijss
Ol. olivæ .....grms 30—ʒj
Lanolini .....grms 60—ʒij
M. et ung. ft.

℞ Anthrarobini....grms 20—ʒv
Ol. olivæ
Lanolini.....āā grms 40—ʒjss
M. et ung. ft.

℞ Anthrarobini....grms 10—ʒiiss
Ol olivæ .....grms 15—ʒiij
Axung. porci....grms 75—ʒijss
M. et ung. ft.

S.

CAN A WOMAN BE RAVISHED WITHOUT HER KNOWLEDGE DURING HYPNOTIC SLEEP?—Brouardel believes this to be possible only under certain very favoring conditions. If a man who is agreeable to the somnambulist offers suggestions to her which are acceptable or of an indifferent character and not offensive, she submits herself to them; but if the suggestions are revolting to her personal affections or her natural instincts she opposes to them a resistance which is almost insuperable. One may easily lead the hypnotized subject, for example, to sign a receipt for money; but if she has preserved her normal chaste instincts, anything contrary to those instincts will be sought in vain. But, on the contrary, if the sentiments and the acts offered by the magnetizer to his subject correspond with her own, she obeys readily his suggestions. In the great majority of cases, however, a woman does not recall in her waking state what happened to her in the state of somnambulism and *vice versa*, yet the same feelings affect her in both states.—*Boston Med. and Surg. Jour.*

An Ohio physician, who brought home for microscopic examination a portion of the throat membrane of a diphtheria victim, permitted his children to look at it under a glass cover. Shortly after his entire family was stricken with diphtheria, and two of the children and himself have since died. Five children are yet down with the disease and are in a critical condition.—*Philadelphia Public Ledger.*

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EDITORIAL.

SMALL POX.

THE occurrence of a few cases of variola in this city appears to have caused wide spread and very unnecessary alarm. The disease is not "raging," the schools have not been closed, the infected houses have not been flagged, the hospital for contagious diseases is not full, nor are any of the curious rumors to which fear gives birth in the least degree veracious.

Few persons outside of the city are aware of the completeness of the precautions taken by the Board of Health to prevent an outbreak of this disease. The city is divided into eighteen districts, in each of which resides a Vaccine Physician. This gentleman makes domiciliary visits to every house in his district from once to four times a year; vaccinating all who desire the operation, free of charge. They are also required by law to keep at all times a supply of virus for gratuitous distribution to any physicians who may apply for it.

Whenever a case of small-pox occurs, the physician in attendance is obliged to at once notify the Health Officer. This functionary sends a card to the vaccine physician of the district, directing him to call at the infected house and those in its vicinity, to notify the inhabitants of the proximity of small-pox and urge upon them the importance of vaccination. Were it not for the negligence or prejudice of individuals, this system would effectually prevent the occurrence of small-pox. As it is, there is scarcely a chance of this disease becoming ever moderately prevalent.

The vaccine physicians are almost invariably men who command the confidence of their districts. They are the best vaccinators in the world; having the skill of, and deserving the consideration given to, specialists in other departments. No one who is familiar with the pains taken by these gentlemen in the study of vaccinia, and in the discharge of their arduous duties, can fail to wonder at the parsimony which places their remuneration at the paltry sum of forty cents for each vaccination. For this, the wealthy city of Philadelphia expects cultivated professional men, of unusual skill, to sacrifice their private practice in preserving the city from the most loathsome of pestilences!

While it is not at all probable that we are to have a visitation like that of 1872, there is an easy method of rendering it wholly impossible. In a city containing a million inhabitants, there is a certain proportion which furnishes possible food for the disease. This is the class who have neither had small-pox, nor are protected by efficient vaccination. Every person who becomes vaccinated lessens the possibilities of disease. It is the duty of every good citizen to see that neither he nor his household furnishes food for a public danger. Were this fully comprehended and were each for himself to perform his duty, small-pox would disappear from the earth, and live only as a memory.

W. F. W.

SURGERY IN NEW YORK.

THREE great men, by the emergencies to which their physical condition gave rise, have recently directed public attention to New York surgery. In two cases the result has been unfortunate, and only Dr. Sands has had the good luck to bring his patient through with safety.

By the newspaper accounts we learn that Roscoe Conkling died of meningitis, which the evacuation of pus from the mastoid cells was too late to prevent and failed to relieve. To those who are familiar with the work done by Garretson with the surgical engine, the statement that Mr. Conkling's surgeons opened the skull with the chisel occasions some surprise. No matter how carefully the malleting is done and how delicate the surgeon's touch, even though the mallet be covered with leather, as the secular press reports, no such delicacy and accuracy are possible as are attained by the use of the swiftly revolving burr.

It would not be amiss for the New York surgeons to invite Garretson to give them an exhibition of his work.

Dr. Cornelius R. Agnew, died of perityphlitis, for which laparotomy was likewise unavailingly performed. Even among the throngs of learned and skilful surgeons whom the metropolis contains, Dr. Agnew's death will leave a gap not easily filled. His great record as a patriotic citizen during the war will be long remembered, as well as his work in ophthalmology and otology.

To appreciate the work which Hammond has done, one has but to notice the frequency with which his writings are quoted abroad, especially by the German neurologists. Thanks to the skill and the good fortune of Dr. Sands, this active member of our profession will probably survive to instruct and interest us with the charming products of his pen for years to come.

W. F. W.

THE RECOGNITION OF HUMAN BLOOD STAINS BY THE MICROSCOPE.

AT the meeting of the Medical Jurisprudence Society of Philadelphia, held on the 10th inst., the important and interesting subject of the recognition of human blood was under discussion. The subject was introduced by Dr. Formad, the Coroner's physician, who read a paper entitled "Microscopical Examination of Blood from a Medico-Legal Standpoint." An incidental feature which gave special importance to the paper was the statement by Dr. Formad, which he was reported as having made on the witness-stand in a recent trial for murder in this State, that he could always recognize human blood by the microscopic appearances and tests. This advanced position however, was not sustained by the remarks of the lecturer, and when taxed with it during the discussion, he denied ever having made such a positive statement, and explained that the stenographer had failed to get all of the answer he had given to the interrogation in the trial referred to. The drift of the discussion was decidedly opposed to the claim that human blood clot could be absolutely recognized beyond the possibility of mistake. In many cases, it is true that valuable evidence of a negative character can be thus obtained, but the most that can be affirmed at present of any given specimen, is that the result of the examination is consistent with the theory that the stain was due to human blood, and that it was derived from some of the higher mammals.

THE REGISTRATION LAW.

THE editor of the *Journal of the American Medical Association* states that we were mistaken in supposing him to be an opponent of State Registry laws, and is even "amused" at our mistake, in view of his consistent record of the last fifty years in favor of higher medical education.

Whether the medical editor can be reasonably expected to recognize the

hand of the writer in an unsigned editorial and to discount it by the author's record, beginning long before the editor was born, we leave our readers to decide. It is certain that while Dr. Davis fully illustrated the defects of the Pennsylvania State law, he failed to give it the credit it deserves and left his approval to be inferred.

Dr. Davis thinks that the duty of conducting these examinations should be vested in a board, totally distinct from the teaching bodies, and that Pennsylvania graduates should be equally compelled to appear before this board. In this we agree with the writer, except as to the composition of the board.

By excluding the faculties of the colleges, he would bar out every person who has had any experience in holding such examinations, and put them in the hands of men inexperienced in teaching. Besides, there would be a constant danger of the board falling into the hands of those who favored one school or were unfriendly to another, and hence injustice would be probable. Medical colleges are expensive affairs, and it would deter the trustees from sinking large amounts in buildings and apparatus if there were a possibility of their graduates being excluded by an inimical board of examiners. If, on the contrary, such a board were to include one member of each faculty, and a unanimous vote were required to pass a candidate, each college would be fully protected in its rights, while the natural pride each would take in sending creditable representatives before the board, would keep up the standard to the highest point.

In evidence of the benefits conferred upon the State by the present law, we place upon record the following items:

One of our foreign exchanges states that a German pretender to medical degrees succeeded in evading the scrutiny of the authorities so completely that he was accorded official position in the German army, and was even decorated for his services.

The *British Medical Journal* calls attention to the fact that, even at this late day, only two of the seven Dublin schools are provided with facilities for practical laboratory work, in the shape of pathological museums.

In our duties as examiners, it has frequently been found necessary to refuse endorsement of documents purporting to be diplomas, but which were in reality only licenses to practice pharmacy, and such minor surgery as barbers do, etc. Had these documents been submitted to the ordinary county officers, it could scarcely have happened that the frauds would have been detected.

The *Canada Lancet* states that "any youth of 16 or 17 years, of but moderate ability, having taken advantage of the public and high school privileges so common in Canada, finds but little difficulty in passing the matriculation examination of the Canadian colleges. But that such limited attainments thoroughly qualify him to comprehend and digest medical science, and to attend with the greatest advantage to himself, our medical colleges, is undeniably absurd." W. F. W.

PERSONAL.—Feeling the necessity of relief from duties that have been getting onerous, and in view of some special work which will engross much of his time, Dr. Woodbury has withdrawn from the management of this journal. Dr. Waugh has now the entire ownership and responsibility of conducting the TIMES, and will continue the energetic policy which has characterized it of late, and will strive to make it even more practical and useful

to its readers than it is at present. Dr. Woodbury will still contribute editorially and otherwise to its pages, and will ever be warmly interested in its success.

AGNEW JUBILEE.—The Alumni, and students of the Medical Department of the University, with a number of invited guests, attended a jubilee in honor of the semi-centennial anniversary of Prof. Agnew's entrance upon the practice of medicine. The exercises were held in the chapel of the University of Pennsylvania on Tuesday last (24th inst.) Addresses were made by Prof. Agnew, Provost Pepper and Prof. S. W. Gross. A pleasant incident was the presentation of a jewel to Dr. Agnew, with an address by Wm. R. Lincoln, of the graduating class. Music was supplied by the University Glee Club and Orchestra. The memorable occasion was truly enjoyable, and afforded all an opportunity of meeting the veteran professor, who appeared in excellent health.

YELLOW FEVER INVESTIGATION.

DR. GEORGE M. STERNBERG, U.S.A., was authorized last year by special Act of Congress, and commissioned by the President of the United States, to proceed to Brazil and Mexico, and investigate the method of inoculation for protection against the yellow fever, and to report upon the value of the method. At a special meeting of the College of Physicians of Philadelphia, held April 21, he made a preliminary announcement of his conclusions, prior to his departure for Havana, to complete his pathological investigations. He declares that both Carmona and Freire are mistaken; that the specific germ of yellow fever has not been discovered; and that inoculation, as practised at Rio and Vera Cruz, is without scientific value.

NOTES FROM SPECIAL CORRESPONDENTS.

LONDON.

MEDICAL STUDENTS IN LONDON.

ANOTHER winter session has come to an end and finds the medical students of the metropolitan medical schools no better off than they were, in the matter of degrees. The scheme of the conjoint Board of the Colleges of Physicians and Surgeons to endow that body with the power to grant degrees in medicine has had the effect of postponing the final decision still further, as the government has been induced in consequence of the opposition raised by this crude scheme to promise to issue a Royal Commission. The University of London was the body which brought the necessary pressure to bear on the government, and a well-known physician and teacher in London recently remarked that the University even yet had the game in its own hands; the Royal Commission will probably consist of a few strong men, who will not feel any particular awe for the senior fellows of the College of Physicians who have succeeded in leading the younger fellows into the quagmire, in which they are just now bogged. In a body constituted as is the College of Physicians, the younger fellows have just as much power as the older if they choose to use it. So far they have been curiously blind to their own interests which are bound up, not with the College of Physicians, but with the Medical Schools; as constituent parts for teaching universities, the medical schools, and the teachers therein, would be far more influential than under the conjoint board scheme.

MEDICAL INTERESTS IN PARLIAMENT.

The only government bills introduced into Parliament this session which involve any medical interests are the Lunacy Act Amendment's Bill, and the Local Government Bill. Nobody thinks about private members bills until they have, in the proportion of about 1 per mille, passed, when they are commonly found to be unworkable, and are either allowed to remain a dead letter, or are repeated indirectly by a new act

Americans who have never tasted the sweets of unmitigated representive government can hardly guess how extremely badly compiled most English acts are. The sanitary acts are so poor, thin, and contradictory that we are really governed in these matters, not by the acts, but by the decisions of the judges, perhaps altogether, and after all, not an unfortunate result. The Local Government Bill will probably pass, as nobody cares to appear so illiberal as to oppose its main principle. Whether it will do much good or not remains to be seen; the chief proposal is to create county boards to manage the business of each county; the local sanitary authorities will apparently work under the county board. Unfortunately, the act will be one which will have to work itself, to a large extent at least, without the assistance afforded by explanations from the bench.

The Lunacy Act Amendment's Bill ought to put a stop to such disgraceful actions as that recently tried at the Bristol assizes. A lady who had been confined in an asylum on the petition of her nearest relatives and of the Mother Superior of the convent in which she had taken lodgings, brought an action years afterwards against two physicians who had signed the necessary certificates. These gentlemen, who received no fee, and who had absolutely no interest, pecuniary or personal, in the confinement of the alleged lunatic are yet put to great expense to defend an action which it ought never to have been possible to bring. If our "legislators" or "elective representatives" can find time to attend to such a trivial matter, persons certified as lunatics will in future be taken before a magistrate who will decide whether the alleged lunatic shall be committed to an asylum (placed under restraint), twenty-four hours later the lunatic will be served with a notice and can appeal to a second magistrate who will be required to go to the asylum and hold another inquiry, his decision being final. The clauses in the bill which provide for this solemn tomfoolery were probably drafted by ex-lunatics, but if they have the effect of shifting some of the responsibility on to the magistrates shoulders, they will have a good effect.

NEW PRESIDENT OF THE COLLEGE OF PHYSICIANS.

Sir Wm. Jenner has been succeeded by Sir Andrew Clark, as President of the Royal College of Physicians; Dr. Richard Quain ran Sir Andrew Clark very close, being actually at the head of the poll in the first ballot. The new President has recently resigned his active duties at the London Hospital; he is commonly reported to have the largest consulting practice in London and is a man of very strongly marked character. He is a fluent and forcible speaker, is possessed of remarkable energy, and is a prodigious worker. He belongs to the new school which take pathology and practical therapeutics, rather than tradition, as its guides, and is thus intellectually as well as chronologically the direct successor of Sir William Jenner.

THE DIETARY OF INFANTS.

The dietary of infancy is a subject of unfailing interest, and one upon which every parent considers him or herself competent to speak; yet it is a subject upon which there is room for considerable difference of opinion. The systems of infant feeding at present in vogue are largely empirical; there are but two physiological facts which are of distinct assistance. One of these is the composition of human milk, and the other the absence of amylolytic ferments from the digestive tract of the infant. Upon the relatively simple question of the chemical composition of human milk, however, most conflicting statements have been made, and Dr. Arthur V. Meigs wrote a book three years ago to prove that human milk contained only about one per cent. of casein; previous analysts having put it down as high as three or four, and in one case seven per cent. As to the second fact, it seems to have been taken for granted by most writers that, as the saliva had no action on starch, the pancreatic juice was also inactive. A few observations which I have recently made appear to show that this belief is correct; and it is at least certain that starch may often be recognized in the motions of infants fed upon starchy foods. About a year ago, my friend and colleague, Mr. R. W. Parker, read

a paper before the Medical Society of London, which was published in the *British Medical Journal* (Vol. I, 1887, p. 772), in which he maintained that starch, if valueless to the infant economy, was yet innocuous; and that many of the evils attributed to starch foods were really traceable to other concomitant circumstances. His views have been a good deal canvassed and in many quarters misunderstood. I therefore asked him to write me an "open letter" on the subject, and he has been good enough to comply in the following terms:

MR. R. W. PARKER ON THE USE OF STARCH.

"You ask me about the artificial feeding of infants. Doubtless you are acquainted with my views on the question of starch foods. Some of my friends regard these views with ill-concealed pity, and reproach me for advocating, as they put it, *indirectly*, the practice of giving starch food. Let me then, in the first place, disabuse your mind if you have any lingering doubts on this point, and theirs, should this statement come within their cognizance. In saying that starch food is not so actively injurious to young infants as is generally taught, I am far from advocating its use. The chief purpose of my paper 'On the Alleged Dangers of Starch-Containing Foods during the Period of Infancy,' read before the Medical Society, was 'to draw greater attention to what I consider, far more than starch foods, as the real causes of the marasmus and mortality among young children, especially among the children of the poorer classes: viz., congenital debility *plus* insufficient and inadequate maternal nursing.' In the great majority of cases, those children which are deprived of breast milk fail also to get the thousand and one little maternal attentions which are quite as essential to health as the milk. Now as to the causes of this congenital debility, they are not far to seek. Those who have any acquaintance with the outpatients of a hospital in a poor district of a large city have all the materials to hand on which to form an opinion. Early, ill-considered marriages, often before the parents are themselves fully developed; irregular modes of living; frequent child-bearing; impaired health from various causes; very scant living, with periods in between of almost absolute starvation, are the most prominent causes of congenital debility in the offspring. Among the richer classes, the various exactions of social life, ill-matched marriages, late hours, money cares, the struggle to keep up appearances, and similar causes, do not fail to leave their impress on the progeny. But whereas, among the poor, hardship of every kind continues to dog the footsteps of the unfortunate children, in the better classes wealth secures more care for children, and hence the effects are less obvious, though they are palpably operative. I need not say more in defense of my thesis. There will never be any appreciable diminution in the death-rate of children during the first year of life until we apply *prevention* rather than a cure for the causes on which this high mortality rests. I shall hope that a time will come when infant-feeding will be a little less talked about, and when a great deal more attention will be bestowed on the feeding and the general surroundings of pregnant mothers; for I shall then expect to see some good results.

"Meanwhile, what is to be done under existing circumstances, and more especially for those children whose mothers are either dead or unavailable? The matter is of chief importance in the case of weakly children; the strong ones seem to thrive notwithstanding a very unphysiological line of treatment. Such must be left to take care of themselves. The more weakly the child, the greater the danger and the difficulties. In the first place, I always caution against giving weakly children too much food. There is an almost irresistible tendency to give such children more than enough, in the hope of making them grow. In many such cases the food has been blamed, whereas in reality all blame should have been laid on the nurse. Then I next caution against any attempt to limit such a child to one particular kind of food. Change and variety are just as wholesome and just as necessary for a baby as for an adult, and the result of a judicious change is just as obvious as are the ill-effects of forcing on it one monotonous diet.

In the third place, cleanliness and care in the preparation of the food will be as highly appreciated by a child as by an adult. Many a time a food is said to disagree, when in reality the trouble lies in its faulty preparation. Let it be borne in mind that overcooking renders all foods very indigestible, though it may not alter the appearance of the food. For instance, in the case of beef tea, with which many small babies are dosed. To be useful, beef-tea must be made with great care: the lean meat must be chopped fine, and should then be digested, over night, in *cold* water; this infusion should be drained off and the meat pressed. The meat should then be digested with an equal amount of hot water for two or three hours in a water-bath, and the hot infusion strained and the meat again pressed. The two infusions should then be mixed, and a pinch of salt added. Of the mixed infusion, a sufficiency for a meal should be warmed to about 150° F., and when cool, enough given, either with a spoon or from a sucking bottle. If beef tea is made in an oven without the help of a water-bath, much of the goodness of the meat is lost: the albumen is coagulated and so overcooked as to be barely digestible—a statement which, *mutatis mutandis*, applies to all other kinds of food which are overcooked. In the fourth place, fresh home-made foods are, as a rule, far better than elaborated and prepared foods. For young infants, fresh milk should always constitute a chief ingredient. Sometimes it is necessary to precipitate a portion of the casein of cows' milk; in other cases the addition of a little baked flour, or of barley water, will prove of service in suspending the casein, and prevent that wholesale coagulation of cows' milk which takes place in the presence of the gastric juice of the infant's stomach. Baked flour is an admirable food when added in small quantity to milk. The flour should be placed in a cup in an oven and baked slowly until of a delicate brown color; then, when cool, it should be rolled fine again. Malt is another excellent food, ground fine and used with milk in the same manner as the flour. Fruit juice, when obtainable, is an excellent adjunct to the usual food, and very wholesome and appetizing. It may be given to the youngest child without harm. In winter time, when fresh fruit is not to be obtained, a little baked apple or pear will be found very useful.

"So much for the general question. As to what should be done in particular cases, I feel it far more difficult to reply; for in each instance there is a personal element which must be carefully reckoned with in any given case. I inform myself what has been done, what food has been given, how often, how much, and how prepared. If I find that a child is actively suffering from the effects of injudicious dieting and treatment, I endeavor to set these effects right again and continue with any diet that may have seemed to suit the child. Gastric and intestinal catarrh are commonly present in cases that have been improperly dieted, and unless this catarrh can be cured, a mere change of diet will prove ineffectual. I have occasionally commenced the treatment of such cases by carefully washing out the stomach with warm water, containing just sufficient carbonate of potassium to make it alkaline; subsequently giving small doses of opium to keep the child quiet, and administering all food for 24 to 48 hours by the rectum. A marvellous change will sometime be seen as the result of such treatment. Among drugs, one of the most useful is carbonate of potassium or of sodium. An infant's secretions are generally very acid; moreover a milk diet increases this acidity; hence the value of a little antacid from time to time——"

THE PRACTICE AT THE SHADWELL HOSPITAL.

At the Shadwell's Children's Hospital, which is the most important *infant's* hospital in London, all hand-fed infants are, as a matter of routine, unless special directions to the contrary are given, placed on a mixture of cow's milk, lime-water, and barley water. The barley water is made from the so-called "prepared-barley," and is very thoroughly boiled, the result being a thick, semi-transparent fluid of about the consistency of cream. A very large proportion of infants even among out-patients begin to do well on this mix-

ture almost from the first; I find that in the wards it is not sweetened as a matter of routine. If this mixture disagrees, either pancreatised milk (described below) or milk diluted with lime water, and enriched with Mellin's food is given. This is a very useful combination and is as a general rule very well borne; in some infants its long continued use is followed by constipation. In severe or obstinate diarrhœa it is the custom to withdraw all milk for a time, and to give only veal broth, thus giving the intestines an almost complete rest, since the broth must be absorbed by the stomach in great part if not altogether.

ARTIFICAL HUMAN MILK.

The artificial human milk recommended by Prof. Frankland has been largely used by the richer classes in London, and is, or was, supplied to its customers ready made by one of the milk companies. It is prepared as follows: Heat half a pint of skimmed milk to 96°F., and add a little rennet (a piece of rennet about an inch square, Playfair); let it stand over a lamp or in hot water for ten minutes, until it is quite warm, taking care not to let it over-heat. Remove the rennet and break up the curd quite small with a knife, and let it stand for a quarter of an hour. Strain through muslin into a small saucepan and boil quickly; measure out one-third of a pint and add to it 110 grains of sugar of milk, and after stirring to dissolve the sugar of milk let it stand till cool; then add two-thirds of a pint of perfectly fresh milk and two teaspoonfuls of cream and stir. The "artificial human milk" thus prepared must be kept in a cool place, and the quantity used for each feeding warmed when it is wanted; the stock must be renewed every twelve hours. For the first month Dr. Playfair recommends rather more than one-third of whey and rather less than two-thirds of milk.

PANCREATISED MILK.

Dr. Eustace Smith prefers Sir William Robert's pancreatised milk in all cases where ordinary cow's milk is digested with difficulty; it may be prepared in the following way, which is a great simplification of the original method: Half a pint of boiling water in which bicarbonate of soda, gr. xx., has been dissolved, is mixed with one pint of fresh cow's milk, and two teaspoonfuls of Benger's or an equivalent quantity of some other good pancreatic solution is added and the jug placed on a stove or range under a "cosey." After an hour the mixture is boiled and is ready for use; the casein is digested and one of the great difficulties is thus overcome; if allowed to digest too long the mixture acquires a bitter nauseous taste.

COLD PACK IN HYPERPYREXIA.

The report of three cases of rheumatic hyperpyrexia successfully treated by the ice-pack in two cases, and by the cold bath in the third, raised a rather interesting discussion, during which Dr. Maclagan attempted to draw a sharp distinction between pyrexia and hyperpyrexia, maintaining that the former was due to increased metabolism, while the latter was neurotic. This theory, which is a favorite with many physicians, appears to be based solely upon certain clinical facts which have been probably incorrectly interpreted; it is admitted that cold acts in hyperpyrexia through the nervous system, the strong impression on the skin leading to a stimulation of the heat centres, and there is no reason to suppose that it acts otherwise in pyrexia; the theory that pyrexia is directly due to increased metabolism produced by the morbific agent will not stand.

ANTIPYRIN AND RESORCIN IN WHOOPING COUGH.

In spite of all that has been written about it, the treatment of whooping-cough is still an opprobium medicorum; nearly all the remedies which have been found of any use belong to one of two classes, antiseptics or nervous sedatives. I have recently made use of two drugs, one belonging to each class, with both of which fairly good results have been obtained. My experience with it is as yet limited, but, so far, I have found antipyrin the most successful direct sedative which I have used. It diminishes the severity of the paroxysms and often entirely

suppresses the whoop, even if given when the second or paroxysmal stage is at its worst; more than this it cannot be trusted to do, though even so much is of course a considerable gain. The bronchitis and catarrh are not at all relieved by it, so far as I have observed; it may be combined with vin. ipecac making a very elegant mixture.

℞. Antipyrin.....gr. ij
Vin. ipecac.....m v
Aq. ad.....ʒ j

This dose may be given every three or even two hours to a two-year-old child. Antipyrin was first used in whooping-cough by Sonnenberger, who recommended that it should be given early, and stated that not only was the duration of the disease shortened, but it ran a milder course. Dellmuth also spoke favorably of antipyrin and Dr. Crozer Griffiths has recently reported a series of highly successful cases (*Therap. Gaz.*, Feb.). Antipyrin is decidedly more rapidly successful than belladonna, but it must be given in adequate doses and sufficiently often. The antiseptic with which I have obtained satisfactory results is resorcin as a local application: The method was introduced by Dr. Moncorvo and was warmly taken up in this country by Dr. W. H. Barlow, of Manchester. A solution of the strength of about two per cent. should be used and thoroughly applied with a big brush or swab to the naso-pharynx every two hours at first. The application generally brings on a paroxysm, but after twenty-four hours the frequency of the paroxysms begins to diminish, and though the disease is not stopped, it is rendered so mild that it can hardly be said seriously to interfere with the patient's comfort. When, after three or four weeks, apparently cured, I have found that a cessation of the application of the resorcin is often followed by a relapse, so that it is safest to continue the application three times a day for six or seven weeks. The greatest successes, however, have been in young adults and children old enough to use a gargle.

℞. Sol. resorcin.....4%
Glycerin....āā....M. ft. garg.

To be used at first every two hours, gradually increasing the intervals until it is used only the first thing in the morning, the last at night, and once in the middle of the day.

SENSATION IN SUTURED NERVES.

The recovery of sensation in the parts supplied by a severed sensory nerve after suture is a standing marvel; a good example of this wonderful example of the reparative power of the human body was exhibited by Dr. F. Marsh to the Midland Medical Society early this month. The patient had cut her wrist, severing not only the median nerve, but the ulnar artery; sensation was lost in the palm, thumb, index and middle fingers. Eighteen weeks after the accident she came under Dr. Marsh's care and he at once cut down on the nerve. The proximal end was bulbous, and connected by a thin strand of tissue with the distant end which was, as is usual, atrophied. The two ends were refreshed and sutured with cat-gut; union of the wound by first intention was obtained; seventeen days after the operation, sensation had returned to the palm and to the proximal ends of the thumb and middle fingers, and ten days later sensation had extended to all the parts affected, except the index finger. The explanation of this failure of the index finger to recover which was given by the operator was that the fibres supplying the digit had not united; but it is not easy to accept the theory of a union of fibres at all. Ranvier found by experiment in rabbits that the axis cylinder grew out from the central end of the divided nerve and so practically made a new nerve, at least that is the inference, though it appears nearly incredible. Dr. Gowers says that it is highly probable that the process in the peripheral part of a nerve is influenced by the connection with other nerves, and the recurrent course of anastomosing fibres; this is an extension of a theory which originated, I believe, with Sir William Gull, but the suggestion still leaves a great deal to be explained, for this "influence" of the anastomosing fibres is ineffectual to produce any return of sensation, ineffectual also, as was the case in Mr. Marsh's patient, to prevent intractable ulceration, until the ends of the severed nerve are brought into opposition. It is certain that the

axis cylinder in the peripheral part of the severed nerve is destroyed by the protoplasmic cells in a very short time, so that a development of a new axis cylinder must necessarily precede the return of sensation.

EXCISION OF LARYNX.

Dr. Felix Semon reported at the last meeting of the Pathological Society a case of epithelioma of the larynx in which excision of the right half of the larynx was performed by Sir William MacCormac; an isolated growth on the under surface of the left cord was excised at the same time; the patient died of pneumonia on the third day. It is reported that the last two cases operated on by Dr. Hahn, of Berlin, have also ended fatally, and that Herr Kayser, the leader of the social democrats, has died immediately after a partial extirpation of the larynx performed by Professor von Bergmann.

ECZEMA IN CHILDREN.

Carbolic acid ointment is a useful application in the sub-acute crusting eczema, frequently met with about the mouth and nose in children; it appears to be often started by an outbreak of herpes labialis which the child irritates by picking and rubbing. The strength should be about twenty grains to the ounce of vaseline; or the ointment of the British Pharmacopœia may be used, which contains vaseline 12 parts, hard paraffin, 6 parts, and pure carbolic acid 1 part.

CURETTING CARBUNCLE.

Mr. Herbert Page, following Mr. Pridgin Teale, of Leeds, has recently had good results by treating carbuncle by scraping with a sharp spoon; the method is certainly an improvement on the treatment by potassa fusa, the same result being attained in a much shorter time. In an exhausting disease, such as carbuncle, time is one of the elements of the cure.

REGISTER OF GREAT BRITAIN.

The new *Registers* of the General Medical Council have just been issued; it appears from the *Medical Register* that there are now no less than 27,246 medical practitioners registered in the United Kingdom; this includes the medical officers of the army and navy, and a large proportion of the Englishmen practising in the colonies and abroad; but even so it would seem that we are an over-doctored race; the rate of increase is great, for there are five English medical practitioners now, for every four in 1876. The dentists on the contrary, have actually diminished in number from 5,289 in 1879, to 4,899 in 1887. This decrease, however, is more apparent than real; the Dentist's Act was passed in 1879, and every chemist who had ever extracted a tooth claimed to be registered as a dentist, and swelled the *Register* to unnatural proportions. These "unqualified dentists" are now beginning to disappear rapidly, their ranks being thinned by death or retirement; they now number 3,889, whereas in 1879 they numbered 4,806; in the same period the "qualified dentists" have increased from 483 to 977. DAWSON WILLIAMS.

BALTIMORE.

SEVERAL of the medical colleges have already held their commencements, and sent out over a hundred candidates for practice. It is to be hoped that all of the latter will realize their anticipations. In spite of the almost universal outcry against medical colleges, I believe that most of them are honestly striving to elevate the standard of professional education. That great advances have been made in this direction in the last twenty-five years must be admitted by all who have given the subject unprejudiced attention.

The legislature which has just adjourned passed a law much needed in this State, namely, a law regulating the practice of medicine. The act is based upon that in force in Illinois and some other States, and it is hoped will result beneficially to the profession and public. The execution of the law is entrusted to the State Board of Health, and, if this body performs its duty, we shall soon be rid of the horde of shameless quacks by whom the State is infested, who delude the public as old Sir Thomas Browne has it, "Not only unto pecuniary defraudation but the irreparable deceit of death."

An ineffectual attempt was made to have a law passed making national provision for the study of anatomy. The bill failed probably because not sufficient interest was manifested by those most concerned. The professors of anatomy in the schools here petitioned in favor of the law, but probably thought it undignified to engage in missionary labor among the members of the legislature. The result is that no one cared enough about the matter to push it through. We shall, therefore, have for two years more, the scandal of desecration of private cemeteries for the purpose of supplying material for dissecting rooms. No efficient law to regulate the supply of dissecting material will pass until the law makers have plainly placed before them the alternative: either a free supply of unclaimed bodies from hospitals and other public institutions, or robbery of private cemeteries. I venture to predict that as soon as the responsibility for either alternative is clearly stated, the first will be unanimously adopted.

A few evenings since the initial steps were taken looking to the organization of an Electro-therapeutical Society in this city. The organization has been effected, and the first stated meeting will take place on the evening of April 30. The programme for the first meeting comprises papers on the history of electro-therapeutics, electrical nomenclature and measurement, and clinical reports from various members. Electrolysis in its various applications is at present being studied by a number of active and earnest workers, and the indications point to some useful work in this line by the members of the new society.

The Medical and Chirurgical Faculty of Maryland will hold its next annual meeting April 24–27, inclusive. Dr. I. E. Atkinson is President, and the subject of his address will be "Medical Charities of Maryland."

Quite a large delegation from this city will attend the meeting of the American Medical Association at Cincinnati. The idea is talked of to endeavor to secure the next meeting in Baltimore. As the first renewal of fraternal relations between the profession North and South after the late war between the States took place at the meeting in this city, it is held that a "peace meeting" here would go far to heal the wounds that have been made in friendships during "unpleasantness" of the last three years. Added to this the completion of the Johns-Hopkins Hospital, and the probable opening of its medical school, would make it worth while for doctors to come and see how the "monumental city" keeps up with the times.

The legislature has appropriated six thousand dollars to aid the College of Physicians and Surgeons in extending the City Hospital. The extension is estimated to cost fifty thousand dollars, which will be almost entirely borne by the college. The new buildings will be erected on the spacious "city spring lot" adjoining the present hospital, which was recently acquired by lease from the city. The new hospital, like the old, will be under the immediate management of the Sisters of Mercy.

G. H. R.

NEW YORK.

MIDDLETON-GOLDSMITH LECTURE.—DA COSTA ON THE RELATION OF RENAL AND HEART AFFECTIONS.—CARTWRIGHT LECTURE, BY WM. H. WELCH, OF BALTIMORE, ON FEVER.—COUNCILMAN ON TUBERCULOSIS.—DEATH OF C. R. AGNEW.

The Middleton-Goldsmith lecture of the New York Pathological Society was delivered April 18, by Dr. J. M. Da Costa, of Philadelphia, on "The Relation of the Renal and Heart Affections." It was preceded by an interesting biographical sketch of the founder of the lectures who died since the last annual meeting, read by his intimate friend, Dr. John C. Peters.

Dr. Da Costa said it was the common belief that diseases of the heart were very likely to give rise to kidney disease. His own opinion, based on the statistics of the Philadelphia hospitals, was that diseases of the heart had no great tendency to lead to affections of the kidneys, especially chronic Bright's disease. Renal congestion, however, took place in about eight out of ten cases of mitral stenosis. It scarcely ever occurred from aortic disease, and

never, he believed, from pure hypertrophy of the heart. It was seen in cardiac dilatation. The congestion was passive. It was important to determine whether the kidney affection was destructive, or whether, as was usually the case, it was only a condition of congestion. Low specific gravity of the urine, shriveled, degenerated casts, uræmic symptoms, and retinitis were indications of a chronic affection.

With regard to the influence of disease of the kidneys in the causation of cardiac disease, he had found that out of 101 cases of renal affection, 41 showed valvular lesions of the heart. In 12 of the 41 cases the kidney disease was acute. In the remaining 29 it was chronic. Of the latter, in 13 there was marked history of rheumatism. Of 78 cases of acute Bright's disease, in 16 the valves of the heart were implicated, the kidney affection having preceded the cardiac lesions. Here, too, a large number of the cases gave a history of rheumatism, leaving the impression that the rheumatism had been the cause of the renal as well as of the cardiac affection. In the acute cases hypertrophy of the heart was not found. In chronic cases its existence was the rule.

How was the valvular complication to be determined clinically? It should be remembered that the heart murmur heard in chronic Bright's disease was often a blood murmur. As cardiac hypertrophy was likely to co-exist with the chronic kidney lesion, although no valvular lesion was present, such hypertrophy could not be taken as evidence that the murmur was due to a valvular lesion. But if the murmur was heard in the axilla and posteriorly at the angle at the scapula, it was organic. Then functional murmurs were strangely influenced by the act of breathing, which was not the case with murmurs due to valvular lesions. Sphygmographic tracings could not be relied upon as significant of a valvular lesion, in this class of cases, as their peculiarity might be entirely dependent upon the influence of the kidney affection.

Hypertrophy of the heart was the rule in chronic kidney disease, the change being due to the increase in the muscle and to fibroid degeneration. Regarding the state of the vessels, there was no difference between those of the heart and those of the kidney; in both their lumen was encroached upon by muscular and fibroid increase of the coats, and in some cases the intima was thickened. Presently the heart began to fail, to undergo fatty change, to dilate—caused by insufficient blood supply. Pure cardiac dilatation might follow Bright's disease, but not often.

Why should hypertrophy of the heart take place? He thought none of the current explanations of this phenomenon were correct. Most of them implied that the resistance to the passage of the blood through the kidneys or elsewhere reacted on the heart and caused compensating hypertrophy. But in five cases of extensive cystic degeneration of the kidneys, in which the lesion must have existed for some time and offered as great resistance to the blood current through those organs as occurred in chronic Bright's disease, no cardiac lesion was found at the autopsy. In three of them there had been marked uræmia. There must then be something more than back pressure of the blood to cause the cardiac affection. It might be claimed that it lay in the blood; but why, then, did it not also occur in syphilitic endarteritis? Why did not cardiac hypertrophy occur in greater degree than it usually did in senile change of the arteries?

The speaker believed that the heart increased in size as the result of a general pathological process; of a general disease, and not of a local kidney affection.

The change, he thought, first took place in the nerve supply. He and Dr. Longstreth had examined the nerve supply of the kidneys and heart in as many as eleven cases, and in all they found a similar change, differing only in degree in different cases. In the ganglia supplying the heart were seen increased fibrous tissue, disappearance of ganglion cells, marked pigmentation, destruction of the free nuclei. He believed, therefore, that chronic Bright's disease was a general, not a local, affection. Some might differ from him, and regard the change in the nerves as a part of the general morbid

process rather than its determining cause. If his views of the nature of the affection were correct, we might expect new and more successful treatment. He was not prepared, however, to indicate what the treatment should be.

The Cartwright lectures were delivered at the new building of the College of Physicians and Surgeons, March 29, April 5 and 12, by Dr. William H. Welch, of Baltimore, who chose for his subject "The General Pathology of Fever." The lectures were closely followed by large and appreciative audiences, and have appeared in several medical journals.

Dr. Councilman, of Baltimore, delivered the first annual address before the Society of the Alumni of Bellevue Hospital, April 4, the title of his address being "Predisposition in Tuberculosis."

Thus it will be seen that New Yorkers are having the pleasure, through annual addresses and lectures, of listening to some of the highest medical talent throughout the country.

DR. C. R. AGNEW.

A great loss has been experienced in the death of Dr. C. R. Agnew, which took place of peritonitis, April 18. Out of respect to his eminent services in the profession, the Academy of Medicine adjourned its meeting on the 19th, immediately after the reading of the minutes and the passage of resolutions commemorating the deceased member. Although Dr. Agnew's name had become associated more particularly with ophthalmology, his mind was too broad and too active to work in a restricted field; and doubtless it was due as much to his wisdom, vigilance, kindliness and labors for the general welfare, as to his great skill as an operative surgeon, that he won the admiration, love and confidence of his professional brethren and of the public. R. C. S.

MÜTTER MUSEUM OF THE COLLEGE OF PHYSICIANS.—In order to increase the usefulness of the Museum, and to add to its already remarkable collections, it is requested, that Fellows of the College and friends of the Museum, in the profession generally and public at large, will make it the repository of specimens which they possess.

ABSTRACTS AND NEW REMEDIES.

CLIMATE FOR CONSUMPTIVES.—KNIGHT, in the *Boston Medical and Surgical Journal*, makes the following suggestions as to a suitable climate for tuberculosis:

(1.) Those presenting the earliest signs of chronic tuberculosis of the apex, with morning cough, but little general disturbance, should live outdoors, in Colorado or New Mexico; at an altitude of 4,000 to 8,000 feet.

(2.) More advanced cases, with some consolidation, but no excavation, if the pulse and temperature range below 100, may go to the same localities; but if not, to Aiken, or the pine woods of South Georgia. When the morbid processes become quiet, a move may be made to the higher altitudes.

(3.) Hæmorrhagic cases should also go to the high altitudes.

(4.) Advanced cases, with hectic or cavities had better stay at home; unless they are possessed of sufficient means to obtain home comforts elsewhere, when they may be sent to Florida.

(5.) Cases of acute general infiltration should be kept at home. Those commencing like acute pneumonia should stay at home till the acute symptoms subside, and then remove to some low, dry place; cautiously changing to more elevated localities. Cases of acute exacerbations should pursue the same course.

(6.) Pneumonic cases, if young, should be sent up the hills. If over fifty, or with dilated heart, or very harassing cough, Southern California offers a suitable climate.

(7.) Those who are threatened with tuberculosis after pleurisy or pneumonia should go to high localities.

(8.) Laryngeal tubercle. For these cases Southern California answers well.

(9.) Complications may alter these rules.

Dilatation forbids high altitudes, while other cardiac cases should be carefully watched.

Acute nephritis is aggravated by high altitudes, but chronic Bright's disease is benefitted.

Patients with intestinal ulcers do badly anywhere.

REVIEWS AND BOOK NOTICES.

TREATISE ON HUMAN PHYSIOLOGY, FOR THE USE OF STUDENTS AND PRACTITIONERS. BY HENRY C. CHAPMAN, M.D. Philadelphia, Lea Brothers & Co., 1887. 8vo, sheep, pp. 945.

This new text-book on physiology is freely illustrated and handsomely printed and bound. The subject matter is a lucid exposition of the present state of the science of living bodies; and the facts of this department of knowledge are fairly presented in a style which is agreeable and attractive. We congratulate Dr. Chapman's students upon possessing so good a text-book, which also will greatly interest physicians who have been in practice for several years, and who wish to acquaint themselves with recent advances in this branch, which is the most important among the institutes of medicine.

We notice that one of our contemporaries made a savage onslaught upon this book, its chief objection being that there were enough text-books on physiology, and that this one was not needed. Clearly, the question goes deeper than this, as it involves the right of the author to teach his subject at all. Since Prof. Chapman is engaged in lecturing on physiology to the largest medical class in the country, his right to teach cannot be questioned; it rests with him as to the mode in which the instruction shall be imparted, whether orally alone, or by spoken and printed lectures, and no one can question his right to publish his book if he believes that this is a more satisfactory way of teaching than simply by didactic lectures. If those who are not his students do not like the book, they are not compelled to buy it. For ourselves, we think the work thoroughly representative, and will gladly recommend it to our students.

AUBERT, in a report to the Academie Francaise, speaks of the enormous development of some towns in Aisne. Oyonnox, which in 1796 counted but 800 inhabitants, had 4196 in 1886. This looks funny to American eyes. Let him see Chicago, and die.

LETTERS TO THE EDITORS.

It is the earnest desire of the Editors to increase the usefulness of this Journal and to render it a practical helper to its readers. One method of accomplishing this end is to open a column devoted to letters to the Editors. Short, concise papers upon medical subjects, records of cases worth being reported, and queries on any medical subject are requested.

ANTIPYRINE HYPODERMICALLY.

EDITORS MEDICAL TIMES:

On Saturday last, at 4 P. M., I was sent for in a great hurry to see the lady I have written to you about (see page 414, preceding number). I found her in awful suffering, so that she could scarcely breathe. I gave her a hypodermic of morphine sulph., $\frac{1}{4}$ gr., atropia, $\frac{1}{150}$ gr., and $7\frac{1}{2}$ grains of antipyrine. After the pain had subsided, I gave 30 grains of antipyrine by the mouth; and, strange to say, she has had no return of the pain up to this writing. She says she has not the slightest particle of pain, and don't see the use of taking medicine. The antipyrine caused some inflammation, as she has a very sore arm. The spot where the needle entered is very hard and purple.

We are now waiting anxiously to see the result of this cold rain; also to see what effect her going out will have. It is a most remarkable case, as I had often previously used morphine hypodermically, and four grains of antipyrine at times. Surely it was the antipyrine hypodermically that did the work. J. B. S.

Editor MEDICAL TIMES:

Through no fault of the printer, an error occurs in a reference in the footnote at the bottom of page 393 in the last number of the *Times*. Instead of "December, 1884," read Feb. 7 and Dec. 26, 1885. Yours very truly,

G. BETTON MASSEY.

Philadelphia, April 8, 1888.

MISCELLANY.

RESOLUTIONS ADOPTED BY THE MEDICAL STAFF OF THE PHILADELPHIA HOSPITAL.—Dr. M. B. Musser died of Bright's disease at his home in West Philadelphia, on the 2nd of March, in the forty-fifth year of his age.

The death of Dr. M. B. Musser having been announced at a recent meeting of this Board, the committee appointed to prepare a suitable notice, beg leave to present the following minute:

Minute.—The Medical Staff of the Philadelphia Hospital have heard with sincere regret of the death of their late colleague, Dr. Milton B. Musser, one of the senior members of the Obstetrical Staff.

Coming from a family of physicians, equipped with a complete medical education and an early training as a hospital resident, with attractive manners and pleasing address, he was thoroughly prepared and peculiarly fitted to undertake the duties of his profession.

With large experience and ripe judgment, enthusiastic in his work, honest in all his professional relations, sympathetic, kind and gentle, he was a model physician; and this Institution that he has so faithfully served, and the staff of which he was so earnest and trusted a member, have lost an honored, tried and conscientious officer.

The staff desire hereby to place on record their high appreciation of Dr. Musser's many excellent qualities and the deep sense of loss which they in common with the community in which he lived have sustained by his death.

S. G. STRYKER,
CHAS. K. MILLS,
J. WILLIAM WHITE.
Committee.

Unanimously adopted, March 10th, 1888.

EDWARD T. BRUEN,
Secretary Medical Board.

In the *Medical and Surgical Reporter*, Dodge reports two cases of hystero-epilepsy, successfully treated with the double chloride of gold and sodium. The dose was one-twentieth of a grain, thrice daily.

EXTEMPORANEOUS INDEX-RERUM.—"A plan which is of value, requires little time and is withal inexpensive, is to procure a large envelope with numerous indexed pockets. This can be procured of any wholesale stationer. Once a month let a few minutes be given to clipping from the journals such articles as may be of value and placing them in a pocket under the letter suggested by the subject."—*Weekly Red. Review.*

[A better plan, perhaps, is to subscribe to the TIMES and the *Review*, and preserve every copy religiously. There is not much of value which escapes the editorial eye.]

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 31, 1888, TO APRIL 7, 1888.

By direction of the Secretary of War, First Lieutenant William L. Kneedler, Medical Corps U. S. Army, will report in person to the Superintendent of the U. S. Military Academy, New York, for duty at that station.

By command of Lieut.-General Sheridan.

R. C. DUNN,
Adjutant-General.

CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING APRIL 14, 1888.

P. A. SURGEON HENRY T. PERCY.—From Naval Academy, and to Hospital, Washington, D.C.

P. A. SURGEON M. A. CRAWFORD.—From Hospital, Washington D.C., and wait orders.

SURGEON J. M. FLINT.—From Fish Commission duty, and to special duty at Smithsonian Institution.

SURGEON R. C. PERSONS.—To duty in charge of Army and Navy Hospital, Hot Springs, Ark.

ASST.-SURGEON E. P. STONE.—From further treatment, and to duty at Hospital, New York.

MED. DIRECTOR DAVID KINDLEBERGER.—From Hospital, Washington, D.C., and wait orders.

MED. INSPECTOR A. A. HOEHLING.—To Naval Hospital, Washington, D.C.

P. A. SURGEON G. E. H. HARMON.—To duty at Naval Academy, Annapolis, Md.

FOR THE WEEK ENDING APRIL 21, 1888.

MED. INSPECTOR A. C. RHOADES.—Detached from special duty, New York, and waiting orders

P. A. SURGEON L. G. HENNEBERGER.—Detached from Naval Hospital, New York, and to special duty attending officers and families, New York.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE, FOR THE FOUR WEEKS ENDED APRIL 7, 1888.

ARMSTRONG, S. T., PASSED ASST.-SURGEON.—Granted leave of absence for fourteen days, March 21, 1888.

BRATTON, W. D., PASSED ASST.-SURGEON.—Promoted and appointed Passed Assistant-Surgeon, from April 6, 1888. April 2, 1888.